GFE Job Sheet 2: Viewing IFP and D2D Grids

Objective

This job sheet will familiarize the user with viewing IFP-derived sensible weather elements as well as a limited set of AWIPS D2D data.

There are three kinds of displayable grids: Forecast database grids (editable), IFP grids (non-editable, and D2D grids (non-editable). The non-editable grids are used for comparison and/or copying into the forecast database. Note that the IFP data in GFE is derived from model soundings calculated at the surface.
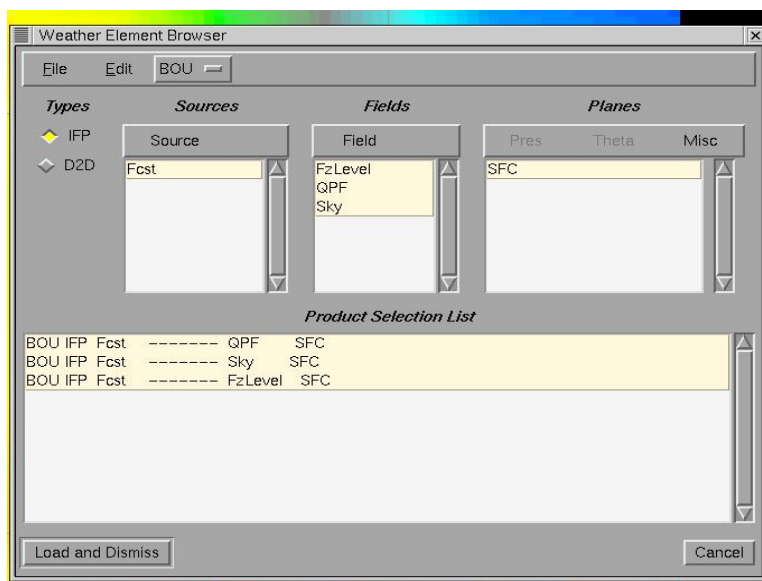
Procedures

A. Unload Weather Elements

1. Select *Weather Element* from the top menu bar.

2. Select *Weather Element Browser*. The Weather Element Browser will appear.

3. Make sure that *IFP* is highlighted under the "types" menu.

4. Deselect (un-highlight) everything listed under "sources". A deselected item will appear with a white background, or it will no longer be visible. Once you deselect everything listed under the

"Sources"area, the "Fields", "Planes" and "Product Selection List" areas should all be empty.

5. Click on *Load and Dismiss* on the bottom of the window. All weather elements listed on the grid manager and spatial editor should disappear.

NOTE: Weather elements can also be unloaded from the legend in the spacial editor by right clicking on the unwanted element and choosing *unload* from the pop up menu. This will unload only the selected grid.

B. Loading IFP Derived Weather Elements

1. Select *Weather Element* from the top menu bar.

2. Select *Weather Element Browser*. The Weather Element Browser will appear.

3. Make sure that *IFP* is highlighted under the "types" area.

4. Select *Source* from the "Sources" menu, and highlight your model of choice. Select *Field* from the "Fields" menu and click on the weather element of interest. Under "Planes", select *Misc*, then *SFC*. This will cause the element to appear in the product selection list. **NOTE 1: All IFP fields are surface derived fields.**

5. Load additional fields if desired.

6. Click on *Load and Dismiss* on the bottom of the window. All weather elements listed in the weather element browser should appear in the Grid Manager and Spatial Editor Legend.

7. View some of the grids you loaded by clicking on the data blocks in the Grid Manager (these blocks are labeled "Ordinary Grid Blocks" in the graphic below). Once you have a grid block selected you can jump to adjacent grids by using the left and right arrow keys on the keyboard.

NOTE: IFP data are available to be viewed only. You cannot edit this data.

C. Loading D2D Model Data

1. Select *Weather Element* from the top menu bar.

2. Select *Weather Element Browser*. The Weather Element Browser will appear.

3. Make sure that *D2D* is highlighted under the "types" menu.

4. Select *Source* from the "Sources" menu and highlight your model of choice. Select *Field* from the "Fields" menu and click on the model field of interest. Various selections under "Planes" will be available depending on the fields selected, similar to the volume browser on AWIPS. Select the Pres, Theta, and Misc values that make sense for the field you have chosen. This will cause the model field to appear in the product selection list. **NOTE 1: Unlike IFP fields that are surface derived, model derived fields are displayable at different levels, similar to D2D. NOTE 2: Refer to the charts at the end of this job sheet for a full list of the field codes.**

5. Load additional fields if desired.

6. Click on *Load and Dismiss* on the bottom of the window. All weather elements listed on the weather element browser should appear in the Grid Manager and Spatial Editor.

7. View some of the grids you loaded by clicking on the data blocks in the Grid Manager.

D. Loading Weather Elements into the Forecast Data Base

1. Select *Weather Element* from the top menu bar.

2. Select *Weather Element Browser*. The Weather Element Browser will appear.

3. Make sure that *IFP* is highlighted under the "types" area.

4. Select *Source* from the "Sources" menu, and highlight "Fcst". Select *Field* from the "Fields" menu and click on the weather element of interest. Under "Planes", select *Misc*, then *SFC.* This will cause the element to appear in the product selection list.

5. Click on *Load and Dismiss* on the bottom of the window. All weather elements listed in the weather element browser should appear in the Grid Manager and Spatial Editor Legend. You may or may not have actual data to view depending on whether or not the Forecast Database has been "populated". The concept of populating the forecast database will be covered in lab 3.

NOTE: The grid manager should now contain the forecast database and the previously loaded IFP and D2D data. The forecast weather elements will be on the top of the Grid Manager separated from the other data by a blue bar.

E. Loading Predefined Weather Element Groups

This procedure will show you how to load a group of pre-defined elements into the forecast database quickly and easily.

1. Select *Weather Element* from the top menu bar.

2. Select *Weather Element Groups*, and pick *public*. This will load the public group and remove the groups that were loaded from the previous steps. **NOTE: The weather element group you just loaded is from the forecast database and it is editable.**

D2D Weather Element Names

AVN MODEL

Weather Element Name	Descriptive Name	Units	Available Levels
gh	Geopotential Height	meters	MB 1000 850 700 500 400 300 250 200 150 100 K 280-350 by 10
rh	Relative Humidity	percent	BL 0>30 MB 850 700 500 400 300 SIG 44>100 K 280-350 by 10
t	Temperature	degrees c.	FHAG 2 MB 850 700 500 400 300 250 200 150 100 TROP K 280-350 by 10
Wind	Wind	meters /second	BL 0>30 MB 850 700 500 400 300 250 200 150 100 TROP K 280-350 by 10
av	Absolute Vorticity	/second	MB 850 700 500 250
pvv	Pressure Vertical Velocity	Pa/s	MB 850 700 500 400 300 250 200 150 100
p	Pressure	pascals	SFC TROP K 280-350 by 10
pw	Precipitable Water	kg/m**2	EA
pmsl	Atmospheric pressure (MSL)	pascals	MSL
sli	Surface Lifted Index	degrees K	SFC
tp	Total Precipitation	kg/m**2	SFC
vss	Vertical Speed Shear	l/s	TROP

ETA MODEL

Weather Element Name	Descriptive Name	Units	Available Levels
gh	Geopotential Height	meters	MB 1000-100 by 50 K 280-350 by 5
rh	Relative Humidity	percent	FHAG 2 MB 1000-100 by 50 BL 0>30 30>60 60>90 90>120 120>150 K 280-350 by 5
t	Temperature	degrees K	FHAG 2 MB 1000-100 by 50 BL 0>30 30>60 60>90 90>120 120>150 K 280-350 by 5

Wind	Wind	meters/second	FHAG 10 MB 1000-100 by 50 BL 0>30 30>60 60>90 90>120 120>150 K 280-350 by 5
av	Absolute Vorticity	/second	MB 1000 850 700 500 250
pvv	Pressure Vertical Velocity	Pa/s	MB 1000-100 by 50
p	Atmospheric Pressure	pascals	SFC K 280-350 by 5
heli	Helicity	m/s **2	FHAG 0>30
cape	Convective Availalbe Potential Energy	J/kg	SFC BL 0>180
cin	Convective Inhibition	J/kg	SFC BL 0>180
bli	Best Lifted Index	degree K	BL 0>180
pli	Parcel Lifted Index	degrees K	BL 0>30
pw	Precipitable Water	kg/m **2	EA
emsp	Mean Sea Level Pressure	pascals	MSL
cp	Convective Precipitation	mm.	SFC
tp	Total Precipitation	mm.	SFC

RUC MODEL			
Weather Element Name	**Descriptive Name**	**Units**	**Available Levels**
gh	Geopotential Height	meters	MB 1000-100 by 50 K 280-350 by 5 FRZ
rh	Relative Humidity	percent	FHAG 2 MB 1000-100 by 50 BL 0>30 60>90 150>180 K 280-350 by 5 FRZ
t	Temperature	degree K	FHAG 2 MB 1000-100 by 50 BL 0>30 60>90 150>180 K 280-350 by 5
Wind	Wind	meters/second	FHAG 10 MB 1000-100 by 50 BL 0>30 60>90 150>180 K 280-350 by 5 MAXW TROP
p	Atmospheric Pressure	pascals	SFC K 280-350 by 5 FRZ MAWX TROP
mmsp	Mean Seal Level Pressure	pascals	MSL
cp	Convective Precipitation	mm.	SFC
tp	Total Precipitation	mm.	SFC
pr	Precipitation Rate	kg/m **2/s	SFC
lgsp	Large Scale Precipitation	kg/m **2	SFC

pot	Potential Temperature at Tropopause	degree K	TROP

MESOETA MODEL			
Weather Element Name	**Descriptive Name**	**Units**	**Available Levels**
gh	Geopotential Height	meters	MB 1000-600 by 25 MB 550-100 by 50 K 280-350 by 5, FHAG 2 BL 0>30 30>60 60>90 90>120 120>150
rh	Relative Humidity	percent	MB 975-600 by 25 MB 550-300 by 50 K 280-350 by 5, 2 FHAG BL 0>30 30>60 60>90 90>120 120>150
t	Temperature	degrees K	MB 1000-600 by 25 MB 550-100 by 50 K 280-350 by 5
Wind	Wind	meters/ second	MB 1000-600 by 25 MB 550-100 by 50 K 280-350 by 5, 10 FHAG BL 0>30 30>60 60>90 90>120 120>150
av	Absolute Vorticity	/second	MB 1000, 850, 700, 500, 250
pvv	Pressure Vertical Velocity	Pa/s	MB 1000-600 by 25 MB 550-100 by 50 K 280-350 by 5
p	Atmospheric Pressure	pascals	K 280-350 by 5, SFC
heli	Helicity	m/s **2	FHAG 0>30
cape	Convective Available Potential Energy	J/kg	SFC, SFC BL 0>180
cin	Convective Inhibition	J/kg	SFC, SFC BL 0>180
bli	Best Lifted Index	degrees K	SFC BL 0>180
pli	Parcel lifted index	degrees K	BL 0>30
pw	Precipitable Water	kg/m **2	EA
emsp	Mean Sea Level Pressure	pascals	MSL
cp	Convective Precipitation	mm.	SFC
tp	Total Precipitation	mm.	SFC
mxt	Maximum Temperature	degrees K	FHAG 2
mnt	Minimum Temperature	degrees K	FHAG 2
dpt	Dewpoint Temperature	degrees K	FHAG 2

ws	Wind Speed	meters/ second	FHAG 10
wd	Wind Direction	meters/ second	FHAG 10
tcc	Total Cloud Cover	percent	EA
thp	Thunderstorm Probability	percent	SFC
cpozp	Probability of Freezing Precip	percent	SFC
cpofp	Probability of Frozen Precip	percent	SFC
pop	Probability of Precip	percent	SFC
snd	Snow Depth	meters	SFC

MRF MODEL			
Weather Element Name	**Descriptive Name**	**Units**	**Available Levels**
gh	Geopotential Height	meters	MB 1000 850 700 500 300 250
rh	Relative Humidity	percent	MB 1000 850 700 500 400 300 BL 0>30 SIG 44>100
t	Temperature	degrees K	MB 1000 850 700 500 300 250 BL 0>30
Wind	Wind	meters/ second	MB 1000 850 700 500 300 250 BL 0>30
av	Absolute Vorticity	/second	MB 850 700 500 250
pmsl	Mean Sea Level Pressure	Pascals	MSL
cp	Convective Precipitation	mm.	SFC
tp	Total Precipitation	mm.	SFC
wgh	Five-wave height	meters	MB 500